The area of interest that I chose for my research project was sleeping. The reason I chose this was because during the 2010 summer holidays, a difficulty in sleep at night created a curiosity in the cause. After consideration at school and some researching, I narrowed my area of interest into the question “**Does lack of sleep affect a student’s ability to learn?”**

Once I had my main question for my research project, I constructed 4 focus questions that I would use to guide me through my research processes. The four focus questions that I chose were:

**How does a person go to sleep and why do they need it?**

Sleep is an essential requirement for the body. During sleep, the body regulates several processes that keep us working at optimum conditions. An important process that occurs during sleep is the synthesis of extra protein molecules that help our bodies repair damaged tissue and strengthen our immune system to fight infections. There are primarily four stages of sleep that a person can experience called the REM (Rapid Eye Movement) sleep cycles. At these different stages of sleep, the brain sends out different brainwaves to indicate which functions in the body should be operating and which should be “turned off”.

“There is some evidence suggesting getting too little or too much is not the best for oneself, so it appears getting the average amount of sleep for one;s age is better.” Michael Gradisar, Interview, 2011)

**What factors affect the amount of sleep that a person incurs?**

“The main cause is biological, and primarily a delay in teenager's 24-hr body clock (also known as their circadian rhythm). It appears with increasing age the body clock gradually delays later and later so that they fall asleep and wake-up later.” (Michael Gradisar, Interview, 2011)

The circadian rhythm is simply explained as being the natural internal clock of the body. Just like the day, the circadian rhythm runs on a 24 hour cycle and resets once it has passed this time. The problem faced with teenagers is that due to a high level of activity in the night rather than the morning; the excess amount of light they induce in this time results in the circadian rhythm thinking that it is still the morning hours. Every time a light is turned on, the circadian rhythm resets slightly, causing the body to work overtime and altering the original 24 hour cycle. As age increases, the cycle is continually altered and becomes out of sync with the regular cycle of the day, causing the body to sleep and wake up later.

**How does sleep contribute to a person’s ability to retain information?**

“We did a study looking at this and found teens who get less than 8 hrs on school nights have a reduced short-term memories which are very important when it comes to learning new information. “ (Michael Gradisar, Interview, 2011)

Studies have found that teenagers who undergo sleep amounts of less than 8 hours are more prone to a decrease in the ability to convert short term memories into long term memories. Lack of sleep has also been found to contribute to feelings of daytime sleepiness, lack of motivation and frequent mood changes.

**Are sleeping problems easily fixed or do they require long treatments?**

“It’s not a quick fix like taking sleeping tablets, so it requires work by the teenager (and with some help from the parent) over a few weeks. The hardest part is gradually getting up earlier and earlier each morning to counteract the delay in their circadian rhythm. “(Michael Gradisar, Interview, 2011)

**Useful Quotes (to be used later):**

*“Sleep disturbance occurs in up to 45% of adolescents. The present study found a link between adolescent sleep loss and working memory performance. This has implications for adolescents who have an insufficient amount of sleep in terms of their ability to encode, store and retrieve information.”*

*“Adolescent Sleep and Working Memory Performance” 2008*

*Michael Gradisar*

*Clinical Director – Child and Adolescent Sleep Clinic*

*Flinders University*

*“After a total sleep deprivation of one night, 44 college students showed the expected significant decrease of performance on cognitive tasks assessing inference, recognition of assumptions and deduction.”*

*“Sleep Loss, Learning Capacity and Academic Performance” 2006*

*Giuseppe Curcio*

*Department of Psychology*

*University of Rome*

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